REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 3, and 5-9 are currently pending. Claims 2 and 4 have been canceled without prejudice; and Claims 1, 3, 5, and 7 have been amended by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.

In the outstanding Office Action, the Abstract was objected to as being more than 150 words; Claims 1-5 and 7-9 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,857,737 to Kamae et al. (hereinafter "the '737 patent"); and Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the '737 patent in view of U.S. Patent No. 5,793,045 to DiFilippo et al. (hereinafter "the '045 patent").

Applicants wish to thank the Examiner for the interview granted Applicant's representative on October 6, 2005, at which time the rejection of Claim 5 and a proposed amendment to Claim 1 were discussed. However, no agreement was reached pending the Examiner's further consideration of the claims upon formal submission of a response to the outstanding Office Action.

In response to the objection to the Abstract, the Abstract has been amended to be less than 150 words. Accordingly, the objection the Abstract is believed to have been overcome.

Amended Claim 1 is directed to a nuclear medicine diagnostic apparatus, comprising: (1) a radiation detector in a form of a single layer including a plurality of semiconductor cells that are arranged in a matrix, detect radiation separately, and output signals representing an energy of the radiation separately; (2) a selection circuit which, in order to select, among events wherein the radiation is detected, a specific event wherein radiation derived from a radio-isotope injected into a subject is detected and a total energy of not less than two

respective signals substantially simultaneously output from not less than two semiconductor cells falls in a predetermined energy window; (3) a position calculation circuit configured to select one semiconductor cell of the not less than two semiconductor cells based only on respective energies of the not less than two respective signals, and to calculate an incidence position based on a position of the selected one semiconductor cell; (4) a counting circuit configured to count the specific event in association with the calculated incidence position; and (5) a circuit configured to generate a distribution of radio-isotope in the subject on the basis of a counting result of the counting circuit. The changes to Claim 1 are supported by the originally filed specification and do not add new matter.[1]

Applicants respectfully submit that the rejection of Claim 1 (and dependent Claims 3 and 8) as anticipated by the '737 patent are rendered moot by the present amendment to Claim 1. Further, Applicants respectfully submit that the rejections of Claims 2 and 4 are rendered moot by the present cancellation of those claims.

The '737 patent is directed to a γ-ray detecting unit formed of a plurality of radiation detectors arranged in layers, as shown, for example, in Figures 1 and 2. Using energy and momentum conservation laws, the '737 detecting unit attempts to compute the reaction sequence and the scattering angle of multiple Compton scatterings within the detecting unit. As shown in Figure 2, the '737 patent discloses calculating an angle range of the incidence γ-ray (i.e., the conical surface C shown in Figure 2) at an initial incidence position (x1, y1, y2) of the γ-ray based on subsequent incidence cell positions in the multiple-layer detecting unit and physical scattering laws. However, Applicants respectfully submit that the '737 patent fails to disclose a position calculation circuit configured to select one semiconductor cell of the not less than two semiconductor cells based only on respective energies of the not less than two respective signals, as recited in amended Claim 1. Rather, as shown in column 8,

[1] See, e.g., original Claim 2.

the '737 patent discloses a system in which the most likely reaction sequence, including the initial scattering point, is determined based on the positions of all the scattering locations, as well as the energy of the γ-ray before and after the individual scatterings. Thus, the '737 patent does not disclose a position calculation circuit configured to select one semiconductor cell based only on respective energies of the not less than two respective signals (that are substantially simultaneously output from the not less than two semiconductor cells), as recited in amended Claim 1. Rather, the location of each scattering point, for example, is crucial to determining the mostly likely reaction sequence. Accordingly, Applicants respectfully submit that Claim 1 (and dependent Claims 3 and 8) patentably define over the '737 patent.

Independent Claim 7 recites limitations analogous to the limitations recited in amended Claim 1. Moreover, Claim 7 has been amended in a manner analogous to the amendment to Claim 1. Accordingly, for the reasons stated above for the patentability of Claim 1, Applicants respectfully submit that the rejection of Claim 7 (and dependent Claim 9) as anticipated by the '737 patent is rendered moot by the present amendment to Claim 7.

Regarding the rejection of Claim 6 under 35 U.S.C. § 103, Applicants respectfully submit that the '045 patent fails to remedy the deficiencies of the '737 patent, as discussed above. Accordingly, Applicants respectfully submit that the rejection of Claim 6 is rendered moot by the present amendment to Claim 1.

Claim 5 has been amended to be an independent claim incorporating the limitations recited in original Claims 1 and 5. Specifically, Applicants note that Claim 5 recites that the position calculation circuit is configured to select, from the not less than two semiconductor cells, the one semiconductor cell that outputs a signal representing a minimum energy, when the not less than two semiconductor cells are located in the first area, and to select the one semiconductor cell that outputs a signal representing a maximum energy, when the not less

than two semiconductor cells are located in a second area. Applicants respectfully submit that the '737 patent fails to disclose the limitations recited in Claim 5. In this regard, Applicants note that page 4 of the Office Action asserts that the '737 patent discloses the limitations recited in Claim 5 because the '737 patent discloses that the initial reaction point is determined based on the energies of the scatterings (based on the equation in '737 column 8) and on the locations of the scatterings (which is asserted to read on the first and second areas recited in Claim 5). However, Applicants note that Claim 5 recites that the selection of a semiconductor cell is based either on a minimum energy rule or a maximum energy rule, based on the collective location of the semiconductor cells that simultaneously output signals. However, Applicants respectfully submit that the '737 patent fails to disclose either a minimum energy rule or a maximum energy rule. Moreover, the '737 patent fails to disclose that the selection of the rule is based upon whether all of the semiconductor cells that output a signal are in a first area or whether all the semiconductor cells that output a signal are in a second area. Rather, the '737 patent merely discloses that the locations of the scatterings as well as the energy of the γ-ray before and after the scatterings is used to determine the scattering sequence, using a predetermined algorithm. Thus, the '737 patent does not disclose using separate "algorithms" based on the locations of the cells, as recited in Claim 5. Accordingly, Applicants respectfully submit that amended Claim 5 patentably defines over the '737 patent.

Thus, it is respectfully submitted that independent Claims 1 and 7 (and all associated dependent claims) patentably define over any proper combination of the '737 and '045 patents.

Consequently, in view of the present amendment and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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